

Listing of Claims:

1. (Currently Amended) A condensate trap comprising;
a body defining a vortex chamber, an inlet and a single outlet, having a circumferential wall and oppositely disposed end walls said vortex chamber defining a void and having a longitudinal axis extending through said void;
an inlet extending within said body and opening at said circumferential wall, the inlet being disposed to admit fluid into the chamber in a tangential direction with respect to said longitudinal axis of the vortex chamber so as to promote a rotational flow of the fluid within the vortex chamber and about said longitudinal axis, thereby to generate a low pressure region within the fluid that is centered on said longitudinal axis[[.]]; and
[[the]] an outlet comprising an escape aperture provided in one of the chamber end walls so as to open into the low pressure region in operation of the condensate trap.
2. (Original) A condensate trap as claimed in Claim 1, wherein at least a portion of the vortex chamber is cylindrical.
3. (Previously Presented) A condensate trap as claimed in Claim 1, wherein at least a portion of the vortex chamber is frusto conical.
4. (Previously Presented) A condensate trap as claimed in Claim 2, wherein the cylindrical portion adjoins the wider diameter end of the frusto conical portion.

5. (Original) A condensate trap as claimed in Claim 4, wherein the inlet opens into the cylindrical portion.

6. (Previously Presented) A condensate trap as claimed in Claim 3, wherein the escape aperture is disposed at the narrower end of the frusto conical portion.

7. (Previously Presented) A condensate trap as claimed in Claim 1, wherein the escape aperture is situated on the longitudinal axis of the vortex chamber.

8. (Previously Presented) A condensate trap as claimed in Claim 1, wherein the escape aperture is provided in a transverse end wall of the vortex chamber.

9. (Currently Amended) A condensate trap as claimed in Claim 1, wherein the vortex chamber is provided in a control element supported by [[a]] said body provided with a second inlet passage and a second outlet passage[[s]], the second inlet passage communicating with the inlet to the vortex chamber and the second outlet passage communicating with the escape aperture.

10. (Currently Amended) A condensate trap as claimed in Claim 9, wherein the control element and the said body abut each other at respective contact surfaces, the second inlet and second outlet passages opening at respective ports on

the contact surface of the said body, and the inlet and escape aperture communicating with respective ports at the contact surface of the control element.

11. (Currently Amended) A condensate trap as claimed in Claim 10, wherein the control element is engageable with the said body in any one of the plurality of different rotational positions about the port communicating with the escape aperture.

12. (Original) A condensate trap as claimed in Claim 11, wherein the port communicating with the inlet comprises a circular groove in the contact face, centered on the port communicating with the escape aperture.

13. (Currently Amended) A condensate trap as claimed in Claim 9, wherein the inlet is one of a plurality of inlets which are directed tangentially of the vortex chamber and are distributed equally around the vortex chamber.

14. (Previously Presented) A condensate trap as claimed in Claim 9, wherein the control element is secured to the body by a cap.

15. (Currently Amended) A condensate trap as claimed in Claim [[14,]]
10 wherein the chamber is open at a face of the control element opposite the contact surface, the chamber being closed by the cap.

16. (Withdrawn) A condensate trap as claimed in Claim 1, further comprising a second inlet which directs the fluid towards the longitudinal axis of the chamber.

17. (Withdrawn) A condensate trap as claimed in Claim 16, wherein the second inlet is provided at the same longitudinal position along the vortex chamber as the first inlet.

18. (Withdrawn) A condensate trap as claimed in claim 16, further comprising switch means to select either the first or second inlet to provide the fluid into the chamber.

19. (Withdrawn) A condensate trap as claimed in Claim 18, wherein the switch means is respective to temperature sensing means, the temperature sensing means sensing the temperature of the fluid upstream of the trap.

20. (Previously Presented) A condensate trap as claimed in Claim 1, wherein the diameter of the escape aperture is not greater than 40 mm.

21. (Previously Presented) A condensate trap as claimed in Claim 20, wherein the diameter of the escape aperture is not greater than 30 mm.

22. (Cancelled)

23. (Cancelled)

24. (Currently Amended) A method of controlling a flow of steam and condensate, the method comprising:

directing the flow freely into a chamber having a longitudinal axis, in a direction that is tangential with respect to the longitudinal axis of the chamber so as to fill the entire chamber thereby promote promoting a rotational flow of the steam in the chamber about the longitudinal axis thereby to generate a low pressure region within the steam that is centered on said longitudinal axis, and

discharging a fluid from the chamber through an escape aperture which is situated at an axial end of the chamber and opens into the low pressure region,

whereby condensate at a temperature below the saturation temperature of the steam at the pressure in the low pressure region is discharged through the escape aperture as liquid water at a relatively high mass flow rate, whereas condensate at a temperature higher than said saturation temperature flashes to steam within the low pressure region and is discharged through the escape aperture as steam at a relatively low mass flow rate.

25. (Cancelled)

26. (Currently Amended) A condensate trap comprising a vortex chamber, an inlet, and a single outlet, said vortex chamber having a cylindrical wall positioned adjacent to a frusto-conical wall that together define a void that extends from said inlet to said single outlet along a common longitudinal axis;

said inlet being arranged in said condensate trap so as to admit fluid into said vortex chamber in a tangential direction with respect to said common longitudinal axis so as to promote a rotational flow of said fluid within said void and about said common longitudinal axis, thereby to generate a low pressure region within said fluid that is centered about said common longitudinal axis; and

the outlet comprising an escape aperture situated at an axial end of said vortex chamber so as to open upon said low pressure region in operation of the condensate trap, wherein the vortex chamber is provided in a control element supported by said body having a contact surface, a second inlet passage and a second outlet passage, the second inlet passage communicating with the inlet to the vortex chamber and the second outlet passage communicating with the escape aperture, and further wherein the second inlet and second outlet passages open at respective ports on said contact surface, the inlet and escape aperture communicate with said respective ports at said contact surface of said control element, and said control element is engageable with the said body in any one of the plurality of different rotational positions about the port communicating with the escape aperture.

27. (New Claim) A condensate trap comprising:

an inlet, a single outlet, and a vortex chamber defined by a cylindrical wall and a frusto-conical wall that together define a void having a longitudinal axis extending through said void, wherein said cylindrical wall adjoins a wider diameter end of said frusto-conical wall;

said inlet opens into said cylindrical portion to admit fluid freely into said entire void, but in a tangential direction with respect to said longitudinal axis of said vortex chamber so as to promote a rotational flow of the fluid within said entire void defined by said vortex chamber and about said longitudinal axis, thereby to generate a low pressure region within said fluid that is centered on said longitudinal axis, and said outlet comprising an escape aperture situated on said longitudinal axis at an axial end of said vortex chamber so as to open into the low pressure region in operation of the condensate trap.